REMARKS

Original claims 1-19 are rejected as anticipated by the Kang and Choi article under 35 U.S.C. 102(b). Original claims 20-39 are also rejected under 35 U.S.C. 102(b) as anticipated by, or as obvious under 35 U.S.C 103(a) from the Kang and Choi reference. The Office states that the Kang and Choi reference teaches a broiler diet using citrus peel at 2-4%.

Original claims 20-39 also are rejected under 35 U.S.C. 102(b) as anticipated by, or as obvious under 35 U.S.C 103(a) from the Deyoe et al article. The Office states that the Deyoe reference teaches feeding broilers up to 2.5% bioflavanoids, which are inherently present in citrus peels. This reference shows purified bioflavonoids at concentrations of 0.5%, 1.0%, 2.5% and 5.0% by weight.

Currently amended independent claims 1 and 20 specify that citrus feed supplement is at a concentration of not more than about 1.5 weight percent of the total weight of the poultry feed. This subject matter was present in currently cancelled claims 2 and 21. Also, claim 4 is amended so as to be consistent with presently amended claim 1.

There is nothing in the Kang and Choi reference to suggest a broiler diet having citrus peel at any level less than 2

percent and clearly not a level as low as the highest level of the present claims, namely 1.5 weight percent. There is no anticipation, and withdrawal of the §102(b) rejection from Kang and Choi is respectfully requested, as is the allowance of claims 1-19, which are not otherwise rejected.

Concerning the §103(a) rejection of claims 20-39 from Kang and Choi, data in the application as filed illustrate that important advantages are realized at levels of 1.5 weight percent and below which do not obtain at levels approaching the levels of 2 percent and above taught by Kang and Choi. For instance, Example 1 shows that the citrus feed supplement at a level of 1.6 weight percent has no effect on or is detrimental to each of: feed conversion at 18 days, adjusted feed conversion at 18 days, feed conversion at 50 days, and mortality. Other data in the same Example 1 show optimal or beneficial results for the same respective criteria when the citrus feed supplement is at 0.2, 0.4, 0.8 and 1.2 weight percent of the poultry feed. Thus, Kang and Choi would have taught one of ordinary skill in the art to use a level much higher than the levels shown to be especially effective in applicants' data in the application as filed.

Reconsideration and withdrawal of the §103(a) rejection from Kang and the Choi are respectfully requested, as is the allowance of claims 20-39.

Concerning Deyoe et al, the lowest level of "citrus bioflavonoids" suggested in this reference is 0.5 percent. As is evident from the following discussion, even this lowest Deyoe et al level far exceeds that claimed by applicants, even far exceeding that of Kang and Choi.

According to the enclosed reference by Manthey and Grohmann, the concentration of bioflavonoids in orange peel from four different varieties varies from 2.6% (Valencia) to 3.9% (Navel). See table 1 on page 812 of the Manthey and Grohmann reference; total bioflavonoid concentration is the sum of the concentrations of the listed individual bioflavonoids for each varieties. To achieve a final concentration in feed of 0.5% "citrus bioflavonoids" (the lowest level mentioned in Deyoe et al) using Navel orange peel as a diet supplement, peel containing such bioflavonoids would have to be added to feed at a concentration of 12.8% weight percent (0.5/3.9 times 100). Therefore, even if Deyoe et al would have taught one of ordinary skill in the art to use citrus peel (which it does not), the range of concentrations of whole peel Navel orange diet

supplement is far greater than that claimed by applicants.

If Valencia orange peel were used as a citrus feed supplement, instead of citrus bioflavonoids as taught by Deyoe, the data in Manthey and Grohmann indicate that Valencia orange peel has a 2.6% concentration of bioflavonoids, which converts to a minimum level of 19.2% of whole Valencia orange peel. This further exceeds the citrus peel supplement level of applicants' claims.

The Manthey and Grohmann reference also discloses that bioflavonoids are present in grapefruit peel at 1.7-2.0% of dry weight of peel (see page 811, left column, of the reference). If Deyoe would have taught one of ordinary skill to use grapefruit peel as a feed supplement containing the "citrus bioflavonoids, the grapefruit peel level would be no lower than about 20.

The enclosed reference Bok et al discloses that the most predominant bioflavonoids in tangerine peel are hesperidin and naringin, present in peel at a total concentration of 0.63% (see page 1183, left column of reference). If Deyoe were to have taught using tangerine peel as a supplement, the Deyoe reference would have taught a whole citrus peel level of 79% to add these bioflavanoids as the lowest Deyoe level.

The enclosed reference Coll et al teaches a concentration of hesperidins and eriocritin in lemon peel of approximately 1.3% and also discloses that other bioflavonoids are present at only minor concentrations (Table 1 and right column, page 406). The 0.5% level of Deyoe "citrus bioflavonoids" indicates that one would be adding about 38% of lemon peel if same were used as a feed supplement.

From the preceding, it is clear that the Deyoe reference does not anticipate the present invention. Reconsideration and withdrawal of the §102(b) rejection from Deyoe are respectfully requested.

The information contained in the accompanying publications indicates that the lowest level of "citrus bioflavonoids" of Deyoe for a variety of citrus sources is over 12%, which is a teaching several times greater than the claimed levels. This alone supports the unobviousness of the present invention.

Furthermore, the Deyoe reference states only that "citrus bioflavonoids" at the stated concentrations are not harmful and specifically states that at the citrus bioflavonoid levels of the reference, there is no beneficial effect on feed conversion. Further, the reference states that there is no statistically significant beneficial effect on mortality. In contrast, data

in the Examples of the current application show that processes and compositions using whole citrus peel at the much lower levels than those of Deyoe have significant beneficial effects on feed conversion, mortality, ammonia secretion and HDL/LDL ratios. Although the applicants do not subscribe to one specific hypothesis, the beneficial effects may be due to some component(s) of citrus peel other than bioflavonoids. A person of ordinary skill in the art would not find it obvious to modify the teachings of Deyoe on the negligible effects of the relatively high concentrations of bioflavonoids of that reference in order to achieve the significant benefits seen with relatively low concentrations of whole citrus peel as described in the present application.

Reconsideration and withdrawal of the §103(a) rejection from Deyoe are respectfully requested.

Applicants enclose an Information Disclosure Statement to formally report the three articles discussed hereinabove.

The drawing revisions presented hereby are to correct an obvious error in the headings of Fig. 1.

Favorable consideration and allowance are respectfully requested.

Respectfully submitted,

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Dated: July 15, 2004

FIG. 1

INFLUENCE OF FEED ON AVERAGE WEIGHT (BWT), FEED CONVERSION (FC), ADJUSTED FEED CONVERSION (AFC), AND MORTALITY

COMPOSITION		DAY 18			DAY 50			7-49 DAYS
NO	CITRUS PEEL LBS/TON	BWT (KG)	FC (KG GAIN/ KG FEED) WEIGHT	AFC (KG GAIN/ KG FEED) WEIGHT	BWT (KG)	FC (KG GAIN/ KG FEED) WEIGHT	AFC (KG GAIN/ KG FEED) WEIGHT	MORTALITY (%)
1	CONTROL	0.583±0.007	1.252±0.007	1.243±0.007	2.860±0.023	1.987±0.018	1.923±0.014	6.000±1.309
2	4	0.582±0.006	1.242±0.003	1.231±0.002	2793±0.025	1964±0.014	1.915±0.009	4.250±0.796
3	8	0.581±0.005	1.233±0.007	1.220±0.007	2.824±0.022	1.953±0.016	1.910±0.010	3.250±0.750
4	16	0.582±0.007	1.244±0.009	1.237±0.009	2.835±0.024	1.959±0.014	1.912±0.011	3.750±1.098
5	24	0.585±0.006	1.249±0.006	1.241±0.007	2.853±0.022	1.970±0.018	1.919±0.006	4.250±1.278
6	32	0.577±0.008	1.259±0.009	1.245±0.008	2.890±0.023	2.000±0.025	1.910±0.010	7.250±1.359
	Pr>F	0.9631	0.1862	0.1262	0.0916	0.4288	0.9335	0.1288

FIG. 1

INFLUENCE OF FEED ON AVERAGE WEIGHT (BWT), FEED CONVERSION (FC), ADJUSTED FEED CONVERSION (AFC), AND MORTALITY

COMPOSITION		DAY 18			DAY 50			7-49 DAYS
NO	CITRUS PEEL LBS/TON	BWT (KG)	FC (KG FEED / KG WEIGHT)	AFC (KG FEED / KG WEIGHT)	BWT (KG)	FC (KG FEED / KG WEIGHT)	AFC (KG FEED / KG WEIGHT)	MORTALITY (%)
1	CONTROL	0.583±0.007	1.252±0.007	1.243±0.007	2.860±0.023	1.987±0.018	1.923±0.014	6.000±1.309
2	4	0.582±0.006	1.242±0.003	1.231±0.002	2793±0.025	1.964±0.014	1.915±0.009	4.250±0.796
3	8	0.581±0.005	1.233±0.007	1.220±0.007	2.824±0.022	1.953±0.016	1.910±0.010	3.250±0.750
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	P>F	0.9631	0.1862	0.1262	0.0916	0.4288	0.9335	0.1288